

Universidade de Brasília  
Faculdade de Ciências da Saúde  
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**Effects of acupuncture on nausea and vomiting management in children with cancer:  
an integrative review.**

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Trabalho de Conclusão de Curso (TCC) apresentado como requisito para aprovação na disciplina TCC 2 do Curso de Graduação em Enfermagem da Universidade de Brasília e para obtenção do grau de Enfermeira.  
Orientadora: Prof<sup>ª</sup>. Dra. Dirce Guilhem  
Coorientadora: Prof<sup>ª</sup>. Dra. Rita de Cássia Melão de Moraes.

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## **Banca Examinadora de Trabalho de Conclusão de Curso**

Larissa Aparecida Corrêa Vieira

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***“God is good all the time. All the time God is good.”***

# **Effects of acupuncture on nausea and vomiting management in children with cancer: an integrative review.**

Larissa Aparecida Corrêa Vieira<sup>1</sup>, Rita de Cássia Melão de Moraes<sup>2</sup>, Dirce Guilhem<sup>3</sup>.

## **ABSTRACT**

**Objective:** evaluate the effects of acupuncture on nausea and vomiting management in children with a cancer. **Method:** integrative review, with the research question built on the PICO strategy. Search strategies for: CINAHL EBSCO, Cochrane Central Library, LILACS, PubMed and Web of Science, an additional search of the gray literature will be performed in Google Scholar, ProQuest and Open Gray. Also, a hand searches of bibliographies from include studies will also be performed. **Results:** three studies were included. The control treatments were: antiemetic medication alone and non-acupuncture integrative modalities. In the first study, the additional antiemetic medication in courses there was a reduction. In the second, the consumption of rescue antiemetic medication and episodes of retching and vomiting were lower in the courses with acupuncture. The third study showed the significant reduction in the acupuncture group for the nausea and vomiting compared for the others integrative therapies. **Conclusion:** according to the data found, there is a need for further studies to be developed in children to prove the effectiveness of acupuncture in the management of signs and symptoms resulting from cancer treatment.

**Descritores:** Criança; Vômito; Náusea; Acupuntura; Neoplasias; Revisão.

**Drescriptors:** Child; Vomiting; Nausea; Acupuncture; Neoplasms; Review.

**Drescriptores:** Niño; Vómitos; Náusea; Acupuntura; Neoplasias; Revisión.

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## INTRODUCTION

Patients with cancer present nausea and vomiting as a result the toxicity or complications related to the cancer, directly or indirectly. The symptoms, regardless of etiology, can modify the nutritional status, pleasure to eat and drink and can significantly impact their quality of life<sup>(1)</sup>.

The likelihood of developing nausea and vomiting after treatment depends of factors as sex, greater risk for female gender, young age, treatment with highly emetogenic chemotherapy, specific drug, dose and route of administration<sup>(2-3)</sup>.

The Multinational Association of Supportive Care in Cancer (MASCC) and The American Society of Clinical Oncology (ASCO) developed evidence-based guidelines for antiemetic selection in children receiving chemotherapy<sup>(4-5-6)</sup>. The lack of a rigorously developed guideline for antiemetic selection for which to base practice limits to optimizing antineoplastic-induced nausea and vomiting control in children with cancer result in the construction of evidences or consensus-based guideline from of improvement control of AINV in adults<sup>(4,6,7)</sup>.

The recent reviews studies evaluate the efficacy of acupuncture for symptom management in patients with cancer<sup>(8)</sup>, efficacy and safety of acupuncture in children<sup>(9)</sup>, evaluate integrative therapies for the management and control of nausea in children,<sup>(10)</sup> but no talk about the use of acupuncture in nausea and vomiting of children with cancer.

Acupuncture has been one the most popular and integral forms of Traditional Chinese Medicine, has been used for over 2000 years in treatment the various diseases and relief from symptoms<sup>(10-11)</sup>. She part of the postulate that humans have an essential energy force called “Qi” that is flowing through body in meridians. Interruptions or imbalances in the flow of Qi cause pain and illness and acupuncture help to regulate the flow of Qi when specific points along the meridians called “acupoints” are stimulated by pressure, needling, heat, electrical, or laser stimulation<sup>(11)</sup>.



The purpose of this study is to review the literature about evidence of acupuncture at the nausea and vomiting management in children with cancer.

## **METHOD**

The construction of the study followed five stages: (1) problem identification which allows clarity in the purpose of the research; (2) literature search, which incorporates search strategy; 3) data evaluation, which focuses on the authenticity, methodological quality, informational value and representativeness of the available primary studies; (4) data analysis, which includes data reduction, display, comparison and conclusions; and (5) synthesis the findings by means of the presentation of a model that comprehensively portrays and that describes the implications for practice and research as well as the limitations of the review<sup>(12)</sup>.

The research question “does acupuncture reduces nausea and vomiting in children that underwent cancer treatment?” was built on the strategy (Population: children that underwent cancer treatment; Intervention: acupuncture; Comparator: standard medical treatment, placebo, usual practice; Outcomes: reduction of nausea vomiting, primary, increased quality of life and accept during the cancer treatment, secondary).

### **Eligibility criteria**

Studies that evaluated needle acupuncture for reducing the nausea and vomiting in children that cancer treatments. There were no language and year restrictions.

Studies were excluded for the reasons: 1. studies that assess patients over 18 years old; 2. assess children without cancer; 3. children did not receive cancer treatments; 4. evaluating acupuncture other than for vomiting and nausea reduction; 5. assess electroacupuncture, acupressure, noninvasive electrostimulation; 6. article not found.

## **Search strategy**

The data were extracted by the first reviewer in July 03, 2018.

The studies were identified by means of individual search strategies for: CINAHL EBSCO, Cochrane Library Central, LILACS, PubMed and Web of Science, an additional search of the grey literature will be performed in Google Scholar, ProQuest and Open Grey. Also, a hand searches of bibliographies from include studies will also be performed.

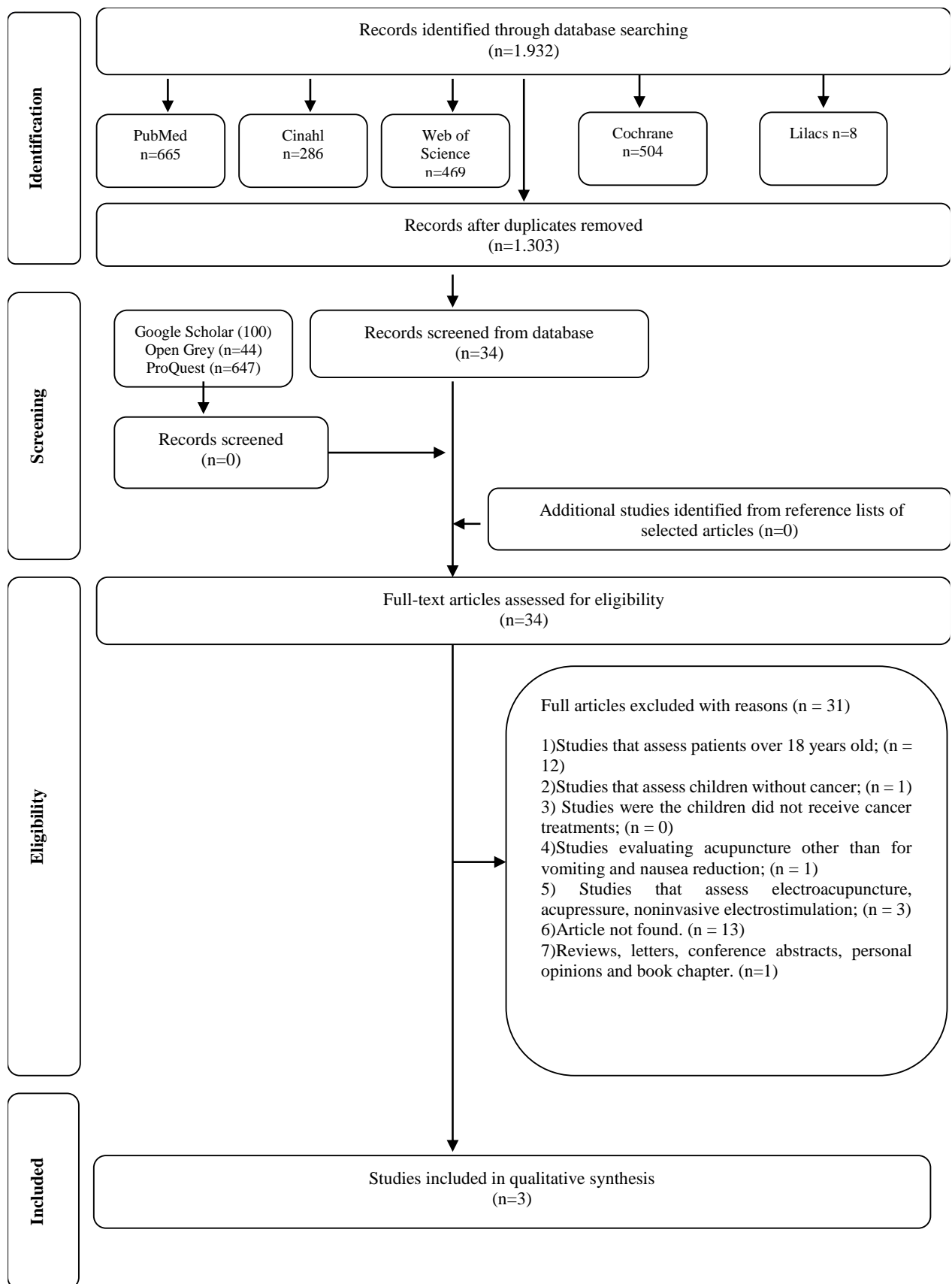
Used the PubMed search strategy and adapted for the other databases: ("acupuncture"[Mesh term] OR "pharmacopuncture" OR "acupuncture therapy" OR "acupuncture treatment" OR "acupuncture") AND ("vomiting"[Mesh term] OR "nausea"[Mesh term] OR "emesis" OR "antiemetic" OR "vomit" OR "vomiting" OR "nauseating" OR "nauseous" OR "queasy" OR "queasiness" OR "nauseated").

Later, the studies were grouped into appropriate software EndNoteBasic®, Thomson Reuters, USA, and duplicates were removed by using Rayyan QCRI.

## **Study Selection**

Studies evaluating only needle acupuncture for children with cancer treatments were included. The study was carried out in two stages. In phase 1, the principal investigator screened titles and abstracts of relevant studies. The articles selected were possibly relevant studies that would fit into the inclusion criteria. In phase 2, the same revisor read the full-text of each selected article and excluded studies that did not meet the inclusion criteria.

In the Figure 1 shows the excluded studies and their respective reasons for exclusion.



**Figure 1** - Flow diagram of literature search and selection criteria adapted from PRISMA.

## RESULTS

In phase 1, 1,932 studies were identified in the five databases. For the removal of duplicates and selection of titles and abstracts, the appropriate Rayyan QCRI software was used. After that, 1,303 articles remained. In a search conducted in the gray literature, no article was selected. Subsequently, titles and abstracts were screened, and 1269 studies were removed. A manual search in the list of references did not identify additional studies. Subsequently, 34 articles were followed for reading the entire text, phase 2. After applying the inclusion and exclusion criteria, 31 articles were excluded and five were selected for data extraction. The flowchart in Figure 1 details the identification process and the reasons for inclusion and exclusion.

### Study characteristics

The selected studies were published in English from 2006 to 2017<sup>(13-14-15)</sup>. Among them, too studies are related to patients who have used chemotherapy<sup>(13-14)</sup> and one related to the use of cancer treatments<sup>(15)</sup>. The studies included heterogeneous samples of different types of cancer and all the studies evaluated acupuncture as an intervention for the relief of signs and symptoms resulting from cancer treatment.

The control treatments were: antiemetic medication alone<sup>(13-14)</sup>; non-acupuncture integrative modalities<sup>(15)</sup> (Summarized in Table 1).

In the first study <sup>(13)</sup>, 11 patients agreed to participate and five continued after three courses. Acupuncture was preferably done prior to the start of chemotherapy and offered during the course on consecutive days. The needles were placed for about 20 minutes uni or bilaterally and after three courses patients could decide whether or not to continue acupuncture use. The nausea and vomiting present no difference between group with acupuncture and with not. But, in the additional antiemetic medication in courses there was a reduction. In more results, her present side effects in one person were pain from needling. The second, twenty-three children

were selected for the study. Acupuncture was applied prior to the start of chemotherapy and offered during the course on consecutive days according to patient demand. They could choose to have their parents present during the procedure. The needles were placed for 20 to 45 minutes uni or bilaterally until a "Qi" sensation of pain, fullness, weight or distension of the local area was reached. After two courses of study, one with and one without acupuncture, there was no effects for the standard antiemetic therapy, but the consumption of rescue antiemetic medication ( $p = 0.001$ ) and episodes of retching and vomiting ( $p = 0.01$ ) were lower in the courses with acupuncture and four of 23 patients presents pain from needling <sup>(14)</sup>. The third study, of the 90 patients selected for the study, 49 received acupuncture. In total, 252 sessions were administered, with an average of four sessions per patient. Patients were followed up at three-week intervals for a period of six months. If the patient chose acupuncture as an integrative modality of treatment, the evaluation was done through a pre-acupuncture questionnaire, assessing patients' expectations regarding acupuncture before treatment, and after completing acupuncture treatment, participants completed a post-acupuncture questionnaire to collect information on patient satisfaction with acupuncture, as well as side effects within 24 hours. This study showed the significant reduction in the acupuncture group for the nausea ( $p = 0,008$ ) and vomiting ( $p = 0,004$ ) compared for the others integrative therapies. Of 252 sessions, 15 presented bleeding and five out 252 sessions demonstrated Grade I bruising <sup>(15)</sup>.

**Table 1** - Summary of the studies` descriptive characteristics included in this analysis.

| Study characteristics    |                 |  |   | Outcome characteristics   |  |  |  |   |
|--------------------------|-----------------|--|---|---|--|--|--|---|
| Author                   | Year, Country   | Journal/<br>Impact Factor              | Study Design  | Objective   | Population characteristics<br>Age (Years)<br>of participants | Intervention characteristics<br>Intervention   | Outcomes   | Main Results  |
| Reindl TK, et al.        | 2006<br>Germany | Supportive<br>Care in<br>Cancer/ 2.676 | Randomized,<br>multicenter,<br>and<br>prospective<br>crossover<br>trial | Evaluate the<br>efficacy and<br>acceptance of<br>acupuncture as a<br>supportive<br>antiemetic<br>approach during<br>highly emetogenic<br>chemotherapy.                                      | 6-18 years   | Antiemetic<br>medication<br>plus<br>acupuncture or<br>antiemetic<br>medication<br>alone.   | Reduction of<br>the need of<br>antiemetic<br>medication.   | Baseline antiemetic medication<br>in a first course (p=0.074). The<br>additional antiemetic<br>medication in courses with<br>acupuncture (p=0.024).<br>Episodes of vomiting: not<br>different (p=0.374). Nausea:<br>not different (p>0.10, each<br>item).<br>Significantly different: p<0.05.   |
|                          |                 |  |   |   |  |  |  |   |
| Gottschling<br>S. et al. | 2008<br>Germany | Klin Pädiatr                           | Multicenter<br>crossover<br>study                                       | Investigated<br>whether<br>acupuncture as a<br>supportive<br>antiemetic<br>approach reduces<br>the need for<br>antiemetic rescue<br>medication during<br>highly emetogenic<br>chemotherapy. | (13.6 y, + / -<br>2.9)                                       | Acupuncture<br>treatment<br>during either<br>the<br>second or third<br>identical<br>chemotherapy<br>course<br>together with<br>standard<br>antiemetic<br>medication. | Measure was<br>the need of<br>antiemetic<br>rescue<br>medication and<br>was the<br>number of<br>episodes of<br>retching and<br>vomiting. | Statistically significant<br>treatment effects could be<br>shown for phenothiazines (p =<br>0.001) and retching / vomiting<br>(p = 0.01), i.e. the<br>consumption of rescue<br>antiemetic medication and<br>episodes of retching and<br>vomiting were lower in the<br>courses with acupuncture. |

Continued Table 1.

|                       |  |                                       |                                       |   |   |  |  |  |
|-----------------------|--|---------------------------------------|---------------------------------------|---|---|--|--|--|
| Chokshi<br>SK, et al. | 2017<br>United<br>States of<br>America | Pediatric<br>Blood &<br>Cancer/ 2.646 | Prospective<br>observational<br>study | Investigated the<br>acceptance of<br>acupuncture and<br>factors associated<br>with its use among<br>children and<br>adolescents with<br>cancer. | - | Antiemetic<br>medication<br>plus<br>acupuncture or<br>antiemetic<br>medication<br>plus other<br>integrative<br>modalities. | Nausea (OR,<br>2.13;<br>95% CI, 1.22–<br>3.74; P =<br>0.008),<br>vomiting (OR<br>2.15; 95% CI,<br>1.29–3.20;<br>P = 0.004) | The most common patient-<br>reported acute adverse<br>event was bleeding (15 out of<br>252 sessions) and<br>reported delayed adverse event<br>was Grade I bruising (5 out of<br>252 sessions). |
|-----------------------|--|---------------------------------------|---------------------------------------|---|---|--|--|--|

## DISCUSSION

In this review, three studies evaluated the efficacy of acupuncture in management nausea and vomiting in children in the treatment of cancer.

Nausea is a common problem in children undergoing cancer treatment that can have a direct impact on decreased quality of life and adherence to treatment of children with cancer. Complement and integrative therapies contribute to the reduction and relief of symptoms in adults, in addition to presenting little or no adverse effects<sup>(10)</sup>.

Several clinical trials that address integrative therapies in pediatric oncology have been conducted. However, their sampling is small. There is a huge gap in studies that have been evaluating the use of acupuncture to nausea and vomiting in children with cancer, which can be confirmed from this review, because by the number of articles found, three studies, the sample of each and by their level of evidence.

A systematic review on the effects of acupuncture in cancer care found 11 RCTs, revealing a positive outcome for relieving nausea and vomiting in adults. Many studies included have reported problems with the lack of information about who performed the treatments and about the blindness of participants, of the 11 RCTs, 8 were at high risk of bias, in 2 the extent of bias was unclear with 1 at low risk of bias, but, in general, between-group effect size for significant studies for acupuncture versus usual care ranged from 0.94 to 1.10 and there is a positive trial with a large between-group effect size (0.80) in patients with breast cancer on high-dose chemotherapy with low risk of bias<sup>(16)</sup>. However, out of 11 studies, only one was about children with cancer<sup>(14)</sup>. A meta-analysis has shown promising results in the use of acupuncture as an integrative therapy in lung cancer, including in reducing nausea and vomiting. However, there were limitations such as: the frequency and duration of treatment varied in the included studies from several days to weeks, did not analyze the herbs used in acupoint injection and plaster application, variety of control interventions, factors that can contribute to the increase of



heterogeneity of the studies<sup>(17)</sup>. A study evaluating the effects of acupuncture and related therapies for palliative care has shown relevant results, but pointed to difficulties with heterogeneity of samples, controls and treatments<sup>(18)</sup>.

Still, a meta-analysis evaluated the effects of acupuncture in prevention and treatment of postoperative nausea and vomiting has concluded that acupuncture is effective, safe and cost-effective<sup>(19)</sup>.

Many studies have demonstrated the efficacy of acupuncture in the management of nausea and vomiting due to oncological or postoperative treatment in adults. In oncology, it has been shown to be cost-effective as complementary therapy, but there are no reviews that address the topic of the use of acupuncture in the management of nausea and vomiting in children with cancer.

For the practice of acupuncture in nursing in Brazil, these studies are extremely important, since Resolution COFEN no. 585/2018<sup>(20)</sup> reinstates to the category the right to use Acupuncture autonomously in its professional conduct, after proving its specific technical training, repealing the provisions to the contrary, especially COFEN Resolution 283/2003 and COFEN Resolution 287/2003.

## **CONCLUSION**

According to the studies included in this review, acupuncture has benefits in the management of nausea and vomiting in children with cancer and for the reduction of the use of rescue anti-emetic medication. There is still a need for further studies to be developed in children to prove better this effectiveness. Future research should be developed with greater sampling and methodological rigor, seeking to identify interventions that are feasible and accepted by children and their families, in addition to showing the cost-benefit of this treatment therapy.

The difficulties or shortcomings found in this study were: the number of studies that report on this complementary therapy in the pediatric literature, the small sample of the studies found and

the methodological rigor in the randomization of the samples and the continuity of the treatment by the patients.

## REFERENCES

- 1 Bao T. Use of Acupuncture in the Control of Chemotherapy-Induced Nausea and Vomiting. *Journal of the National Comprehensive Cancer Network*. 2009; 7(5):606-612. doi: 10.6004/jnccn.2009.0041
- 2 Naeim A, Dy S, Lorenz K, Sanati H, Walling A, Asch S. Evidence-Based Recommendations for Cancer Nausea and Vomiting. *JOURNAL OF CLINICAL ONCOLOGY* [Internet]. 2008 [cited 20 October 2018]; 26(23):3903-3910. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/18688059>
- 3 Hesketh PJ. Chemotherapy-Induced Nausea and Vomiting. *The New England Journal of Medicine* [Internet]. 2008 [cited 20 October 2018]; 358(23):2482–2494. Available from: <https://www.nejm.org/doi/full/10.1056/NEJMra0706547>
- 4 Dupuis L, Nathan P. Optimizing Emetic Control in Children Receiving Antineoplastic Therapy. *Pediatric Drugs*. 2010; 12 (1):51-61. doi: 10.2165/11316190-000000000-00000
- 5 Dupuis L, Boodhan S, Holdsworth M, Robinson P, Hain R, Portwine C, et al. Guideline for the Prevention of Acute Nausea and Vomiting Due to Antineoplastic Medication in Pediatric Cancer Patients. *Pediatric Blood and Cancer*. 2013;(60):1073-1082. doi: 10.1002/pbc.24508
- 6 Dupuis L, Boodhan S, Sung L, Portwine C, Hain R, McCarthy P, et al. Guideline for the Classification of the Acute Emetogenic Potential of Antineoplastic Medication in Pediatric Cancer Patients. *Pediatric Blood and Cancer*. 2011;(57):191-198. doi: 10.1002/pbc.23114
- 7 O’Kane A. An evaluation of the implementation of the MASCC anti-emetic guideline for anthracycline/cyclophosphamide based chemotherapy in female patients. *Support Care Cancer*. 2010;18: 82–83.

- 8 Garcia M, McQuade J, Haddad R, Patel S, Lee R, Yang P et al. Systematic Review of Acupuncture in Cancer Care: A Synthesis of the Evidence. *Journal of Clinical Oncology*. 2013;31 (7):952-960. doi: 10.1200/JCO.2012.43.5818
- 9 Yang C, Hao Z, Zhang L, Guo Q. Efficacy and safety of acupuncture in children: an overview of systematic reviews. *International Pediatric Research Foundation*. 2015;78 (2):112-119. doi: 10.1038/pr.2015.91
- 10 Momani T, Berry D. Integrative Therapeutic Approaches for the Management and Control of Nausea in Children Undergoing Cancer Treatment: A Systematic Review of Literature. *Journal of Pediatric Oncology Nursing*. 2017;34 (3):173-184. doi: 10.1177/1043454216688638
- 11 Brittner M, Le Pertel N, Gold M. Acupuncture in Pediatrics. *Current Problems in Pediatric and Adolescent Health Care*. 2016;46 (6):179-183. doi: 10.1016/j.cppeds.2015.12.005
- 12 Hopia H, Latvala E, Liimatainen L. Reviewing the methodology of an integrative review. *Scandinavian Journal of Caring Sciences*. 2016;30 (4):662-669. doi: 10.1111/scs.12327
- 13 Reindl T, Geilen W, Hartmann R, Wiebelitz K, Kan G, Wilhelm I, et al. Acupuncture against chemotherapy-induced nausea and vomiting in pediatric oncology. *Supportive Care in Cancer*. 2006;14 (2):172-176. doi: 10.1007/s00520-005-0846-z.
- 14 Gottschling S, Reindl T, Meyer S, Berrang J, Henze G, Graeber S, et al. Acupuncture to Alleviate Chemotherapy-induced Nausea and Vomiting in Pediatric Oncology – A Randomized Multicenter Crossover Pilot Trial. *Klin Pädiatr*. 2008;220(06):365-370. doi: 10.1055/s-0028-1086039.
- 15 Chokshi S, Ladas E, Taromina K, McDaniel D, Rooney D, Jin Z, et al. Predictors of acupuncture use among children and adolescents with cancer. *Pediatric Blood & Cancer*. 2017;64 (7):1-7. doi: 10.1002/pbc.26424
- 16 Garcia M, McQuade J, Haddad R, Patel S, Lee R, Yang P, et al. Systematic Review of Acupuncture in Cancer Care: A Synthesis of the Evidence. *Journal of Clinical Oncology*

[Internet]. 2013 [cited 8 November 2018];31(7):952-960. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3577953/>

17 Chen H, Li S, Cho W, Zhang Z. The role of acupoint stimulation as an adjunct therapy for lung cancer: a systematic review and meta-analysis. BMC Complementary & Alternative Medicine [Internet]. 2013 [cited 8 November 2018];(13):362. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4029525/>

18 Cheong K, Zhang J, Huang Y, Zhang Z. The Effectiveness of Acupuncture in Prevention and Treatment of Postoperative Nausea and Vomiting - A Systematic Review and Meta-Analysis. PLoS One [Internet]. 2013 [cited 8 November 2018];8 (12). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3862842/>

19 Wu X, Chung V, Hui E, Ziea E, Ng B, Ho R. Effectiveness of acupuncture and related therapies for palliative care of cancer: overview of systematic reviews. Scientific Reports [Internet]. 2015 [cited 8 November 2018];(5). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4660374/>

20 Resolução COFEN nº585/2018 [Internet]. Rio de Janeiro, 2018 [cited 17 November 2018];. Available from: [http://www.cofen.gov.br/resolucao-cofen-no-585-2018\\_64784.html](http://www.cofen.gov.br/resolucao-cofen-no-585-2018_64784.html)

## APPENDIX

### Pubmed

| Search | Search strategy   | Results |
|--------|---|---------|
| #1     | ("acupuncture"[Mesh] OR "pharmacopuncture" OR "acupuncture therapy" OR "acupuncture treatment" OR "acupuncture") AND ("vomiting"[Mesh] OR "nausea"[Mesh] OR "emesis" OR "antiemetic" OR "vomit" OR "vomiting" OR "nauseating" OR "nauseous" OR "queasy" OR "queasiness" OR "nauseated") | 665     |

### Cinahl

| Search | Search strategy   | Results |
|--------|---|---------|
| #1     | ("acupuncture"[Mesh] OR "pharmacopuncture" OR "acupuncture therapy" OR "acupuncture treatment" OR "acupuncture") AND ("vomiting"[Mesh] OR "nausea"[Mesh] OR "emesis" OR "vomit" OR "vomiting" OR "nauseating" OR "nauseous" OR "queasy" OR "queasiness" OR "nauseated") | 286     |

### Web of Science

| Search | Search strategy  | Results |
|--------|--|---------|
| #1     | ("acupuncture" OR "pharmacopuncture" OR "acupuncture therapy" OR "acupuncture treatment") AND ("vomiting" OR "nausea" OR "emesis" OR "antiemetic" OR "vomit" OR "nauseating" OR "nauseous" OR "queasy" OR "queasiness" OR "nauseated") | 469     |

### Cochrane Library

| Search | Search strategy  | Results |
|--------|--|---------|
| #1     | ("acupuncture" OR "pharmacopuncture" OR "acupuncture therapy" OR "acupuncture treatment") AND ("vomiting" OR "nausea" OR "emesis" OR "antiemetic" OR "vomit" OR "nauseating" OR "nauseous" OR "queasy" OR "queasiness" OR "nauseated") | 504     |

### Lilacs

| Search | Search strategy   | Results |
|--------|---|---------|
| #1     | ("acupuncture" OR "pharmacopuncture" OR "acupuncture therapy" OR "acupuncture treatment" OR "acupuncture") AND ("vomiting" OR "nausea" OR "emesis" OR "antiemetic" OR "vomit" OR "vomiting" OR "nauseating" OR "nauseous" OR "queasy" OR "queasiness" OR "nauseated") | 8       |

### Google Scholar

| Search | Search strategy                            | Results |
|--------|--|---------|
| #1     | ("acupuncture" AND "nausea" OR "vomiting") | 100     |

### ProQuest

| Search | Search strategy  | Results |
|--------|--|---------|
| #1     | TI,AB("acupuncture" OR "pharmacopuncture" OR "acupuncture therapy" OR "acupuncture treatment") AND TI,AB("vomiting" OR "nausea" OR "emesis" OR "vomit" OR "nauseating" OR "nauseous" OR "queasy" OR "queasiness" OR "nauseated") | 647     |

### Open Grey

| Search | Search strategy                            | Results |
|--------|--|---------|
| #1     | ("acupuncture" AND "nausea" OR "vomiting") | 44      |